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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/630,664	07/31/2003	Charles D. Combs	113692CON-1 (ATT.0020002)	7920
7590 01/25/2006 S. H. Dworetsky AT&T Corp One AT&T Way Room 2A-207 Bedminster, NJ 07921			EXAMINER PHAN, HANH	
			ART UNIT 2638	PAPER NUMBER
DATE MAILED: 01/25/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/630,664	Applicant(s) COMBS ET AL.	
	Examiner Hanh Phan	Art Unit 2638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 42, 49 and 50 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 42, 49 and 50 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the Amendment filed 05/25/2005.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 42 and 49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,654,563 (Darcie et al) in view of Brown (US Patent No. 6,523,177) and further in view of Pan (US Patent No. 6,147,786).

Regarding claims 42 and 49, Darcie et al (US Patent No. 6,654,563) discloses a communication system, comprising:

a mux node including a first lightwave interface device for communication with a head end, the mux node further including a second lightwave interface device for transmitting a plurality of optical signal including analog and digital signals; and

a mini fiber node including a third lightwave interface device for receiving the optical signal from the second lightwave interface device of the mux node (see claims 13-19 of Darcie).

Darcie differs from claims 42 and 49 in that he fails to specifically teach the mux node includes a radio frequency signal compiler that enables frequency division multiplexing of a plurality of upstream signals received from a corresponding plurality of mini fiber nodes and the mini fiber node being further configured to communicate analog and digital signals to end user equipment via a wired connection. However, Brown in US Patent No. 6,523,177 teaches a mux node (330)(Fig. 2) includes a radio frequency signal compiler (235)(Fig. 2) that enables frequency division multiplexing of a plurality of upstream signals received from a corresponding plurality of mini fiber nodes (300)(Fig. 2) (col. 2, lines 51-67 and col. 3, lines 1-23) and Pan in US Patent No. 6,147,786 teaches the mini fiber node being further configured to communicate analog and digital signals to end user equipment via a wired connection (see Fig. 1, col. 8, lines 22-67 and col. 9, lines 1-23). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the mux node includes a radio frequency signal compiler that enables frequency division multiplexing of a plurality of upstream signals received from a corresponding plurality of mini fiber nodes and the mini fiber node being further configured to communicate analog and digital signals to end user equipment via a wired connection as taught by Brown and Pan in the system of Darcie. One of ordinary skill in the art would have been motivated to do this since Brown suggests in column 2, lines 51-67 and col. 3, lines 1-23 and Pan suggests in

Art Unit: 2638

column 8, lines 22-67 and col. 9, lines 1-23 that using such the mux node includes a radio frequency signal compiler and the mini fiber node being further configured to communicate analog and digital signals to end user equipment via a wired connection have advantage of allowing combining the individual signals into the multiplexed signal and distributing analog signals and digital signals from the central office to the users.

4. Claim 50 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-24 of U.S. Patent No. 6,654,563 (Darcie et al) in view of in view of Pan (US Patent No. 6,147,786).

Regarding claim 50, Darcie et al (US Patent No. 6,654,563) discloses a network node that communicates between a head end and a plurality of mini fiber nodes, comprising:

- a first lightwave interface device for communication with a head end;

- a second lightwave interface device for transmitting a plurality of optical signals to a respective plurality of mini fiber nodes;

- a mux/demux/router component that is operative to receive electrical signals that have been converted from optical signals received from the head end, demultiplexes the received electrical signals and forwards separate demultiplexed signals to the second lightwave interface device that transmits the separate demultiplexed signals to designated mini fiber nodes (see claims 13-19 of Darcie).

Darcie differs from claims 42 and 49 in that he fails to specifically teach the mini fiber node being configured to communicate analog and digital signals to end user

equipment via a wired connection. However, Pan in US Patent No. 6,147,786 teaches the mini fiber node being further configured to communicate analog and digital signals to end user equipment via a wired connection (see Fig. 1, col. 8, lines 22-67 and col. 9, lines 1-23). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the mini fiber node being configured to communicate analog and digital signals to end user equipment via a wired connection as taught by Pan in the system of Darcie. One of ordinary skill in the art would have been motivated to do this since Pan suggests in column 8, lines 22-67 and col. 9, lines 1-23 that using such the mini fiber node being configured to communicate analog and digital signals to end user equipment via a wired connection have advantage of allowing distributing analog signals and digital signals from the central office to the users.

5. Claims 42 and 49 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,751,417 (Combs et al) in view of Brown (US Patent No. 6,523,177) .

Regarding claims 42 and 49, Combs et al (US Patent No. 6,751,417) discloses a communication system, comprising:

a mux node including a first lightwave interface device for communication with a head end, the mux node further including a second lightwave interface device for transmitting a plurality of optical signal including analog and digital signals; and

a mini fiber node including a third lightwave interface device for receiving the optical signal from the second lightwave interface device of the mux node nodes and

the mini fiber node being further configured to communicate analog and digital signals to end user equipment via a wired connection (see claim 1 of Combs).

Combs differs from claims 42 and 49 in that he fails to specifically teach the mux node includes a radio frequency signal compiler that enables frequency division multiplexing of a plurality of upstream signals received from a corresponding plurality of mini fiber. However, Brown in US Patent No. 6,523,177 teaches a mux node (330)(Fig. 2) includes a radio frequency signal compiler (235)(Fig. 2) that enables frequency division multiplexing of a plurality of upstream signals received from a corresponding plurality of mini fiber nodes (300)(Fig. 2) (col. 2, lines 51-67 and col. 3, lines 1-23). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the mux node includes a radio frequency signal compiler that enables frequency division multiplexing of a plurality of upstream signals received from a corresponding plurality of mini fiber nodes as taught by Brown in the system of Combs. One of ordinary skill in the art would have been motivated to do this since Brown suggests in column 2, lines 51-67 and col. 3, lines 1-23 that using such the mux node includes a radio frequency signal compiler has advantage of allowing combining the individual signals into the multiplexed signal and providing a optical communication system with high speed and high capacity.

6. Claim 50 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of U.S. Patent No. 6,751,417 (Combs et al) in view of in view of Frigo (US Patent No. 5,521,734).

Regarding claim 50, Combs et al (US Patent No. 6,751,417) discloses a network node that communicates between a head end and a plurality of mini fiber nodes, comprising:

a first lightwave interface device for communication with a head end;

a second lightwave interface device for transmitting a plurality of optical signals to a respective plurality of mini fiber nodes and wherein each of the plurality of mini fiber nodes being configured to communicate analog and digital signals to end user equipment via a wired connection (see claims 13-19 of Darcie).

Combs differs from claim 50 in that he fails to teach a mux/demux/router component that is operative to receive electrical signals that have been converted from optical signals received from the head end, demultiplexs the received electrical signals and forwards separate demultiplexed signals to the second lightwave interface device that transmits the separate demultiplexed signals to designated mini fiber nodes. However, Frigo in US Patent No. 5,521,734 teaches a mux/demux/router component (220)(Fig. 3) that is operative to receive electrical signals that have been converted from optical signals received from the head end, demultiplexs (i.e., DMUX 128)(Fig. 3) the received electrical signals and forwards separate demultiplexed signals to the second lightwave interface device (116)(Fig. 3) that transmits the separate demultiplexed signals to designated mini fiber nodes (i.e., ONU#1-ONU_n-1)(col. 4, lines 37-61). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the mux/demux/router component that is operative to receive electrical signals that have been converted from optical signals received from

Art Unit: 2638

the head end, demultiplexes the received electrical signals and forwards separate demultiplexed signals to the second lightwave interface device that transmits the separate demultiplexed signals to designated mini fiber nodes as taught by Frigo in the system of Combs. One of ordinary skill in the art would have been motivated to do this since Frigo suggests in column 4, lines 37-61 that using such a mux/demux/router component has advantage of allowing distributing the signals from the central office to the designated mini fiber nodes.

7. Claims 42 and 49 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 38 and 42 of copending Application No. 10/721,864 (Combs et al) in view of view of Brown (US Patent No. 6,523,177).

Regarding claims 42 and 49, Combs et al (copending Application No. 10/721,864) discloses a communication system, comprising:

a mux node including a first lightwave interface device for communication with a head end, the mux node further including a second lightwave interface device for transmitting a plurality of optical signal including analog and digital signals; and

a mini fiber node including a third lightwave interface device for receiving the optical signal from the second lightwave interface device of the mux node nodes and the mini fiber node being further configured to communicate analog and digital signals to end user equipment via a wired connection (see claims 38 and 42 of Combs).

Combs differs from claims 42 and 49 in that he fails to specifically teach the mux node includes a radio frequency signal compiler that enables frequency division multiplexing of a plurality of upstream signals received from a corresponding plurality of mini fiber. However, Brown in US Patent No. 6,523,177 teaches a mux node (330)(Fig. 2) includes a radio frequency signal compiler (235)(Fig. 2) that enables frequency division multiplexing of a plurality of upstream signals received from a corresponding plurality of mini fiber nodes (300)(Fig. 2) (col. 2, lines 51-67 and col. 3, lines 1-23). Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the mux node includes a radio frequency signal compiler that enables frequency division multiplexing of a plurality of upstream signals received from a corresponding plurality of mini fiber nodes as taught by Brown in the system of Combs. One of ordinary skill in the art would have been motivated to do this since Brown suggests in column 2, lines 51-67 and col. 3, lines 1-23 that using such the mux node includes a radio frequency signal compiler has advantage of allowing combining the individual signals into the multiplexed signal and providing a optical communication system with high speed and high capacity.

This is a provisional obviousness-type double patenting rejection.

8. Claim 50 is provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 38 and 42 of copending Application No. 10/721,864 (Combs et al). Although the conflicting claims are not identical, they are not patentably distinct from each other because the limitations

recited in claim 50 of the instant application are encompassed by claims 38 and 42 of copending Application No. 10/721,864 (Combs et al).

Regarding claim 50, Combs et al (copending Application No. 10/721,864) discloses a network node that communicates between a head end and a plurality of mini fiber nodes, comprising:

a first lightwave interface device for communication with a head end;

a second lightwave interface device for transmitting a plurality of optical signals to a respective plurality of mini fiber nodes and wherein each of the plurality of mini fiber nodes being configured to communicate analog and digital signals to end user equipment via a wired connection;

a mux/demux/router component that is operative to receive electrical signals that have been converted from optical signals received from the head end, demultiplexes the received electrical signals and forwards separate demultiplexed signals to the second lightwave interface device that transmits the separate demultiplexed signals to designated mini fiber nodes (see claims 38 and 42 of Combs).

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 2638

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

10. Claims 42 and 49 are rejected under 35 U.S.C. 102(e) as being anticipated by Feldman et al (US Patent No. 6,577,414).

Regarding claims 42 and 49, referring to figures 1-5 and 7, Feldman teaches a communication system, comprising:

a mux node (i.e., HUB 126, Fig. 2) including a first lightwave interface device (i.e., optical splitter 230, Fig. 2) for communication with a head end (i.e., headend 110, Fig. 2), the mux node (HUB 126, Fig. 2) further including a second lightwave interface device (i.e., optical splitter 231, CWDM 232, and optical combiner 236, Fig. 2) for transmitting a plurality of optical signals, wherein at least two of the optical signals include both analog and digital signals, wherein the mux node (HUB 126, Fig. 2) includes a radio frequency signal compiler (i.e., RF combiner 241, Fig. 2) that enables frequency division multiplexing of a plurality of upstream signals received from a corresponding plurality of mini fiber nodes (i.e., mini fiber nodes 150, Figs. 1 and 4); and

a mini fiber node (i.e., mini fiber node 150, Figs. 1 and 4) including a third lightwave interface device (i.e., CWDM 356, optical receiver 352 and optical transmitter 358, Fig. 4) for receiving the optical signals from the second lightwave interface device (i.e., optical splitter 231, CWDM 232, and optical combiner 236, Fig. 2) of the mux node (i.e., HUB 126, Fig. 2) the mini fiber node (i.e., mini fiber node 150, Figs. 1 and 4) being further configured to communicate analog and digital signals to end user equipment

(i.e., cable modem, set top box, telephone, TV..., Fig. 4) via a wired connection (see from col. 3, line 59 to col. 7, line 42).

11. Claim 50 is rejected under 35 U.S.C. 103(a) as being unpatentable over by Feldman et al (U.S. Patent No. 6,577,414) in view of Frigo (US Patent No. 5,521,734).

Regarding claim 50, referring to figures 1-5 and 7, Feldman teaches a network node (i.e., HUB 126, Fig. 2) that communicates between a head end (i.e., headend 110, Fig. 2) and a plurality of mini fiber nodes (i.e., mini fiber nodes 150, Figs. 1 and 4), comprising:

a first lightwave interface device (i.e., optical splitter 230, Fig. 2) for communication with a head end (i.e., headend 110, Fig. 2);

a second lightwave interface device (i.e., CWDM 232, optical splitter 231 and optical combiner 236, Fig. 2) for transmitting a plurality of optical signals to a respective plurality of mini fiber nodes (i.e., mini fiber nodes 150, Figs. 1 and 4), wherein each of the plurality of mini fiber nodes being configured to communicate analog and digital signals to end user equipment (i.e., cable modem, set top box, telephone, TV..., Fig. 4) via a wired connection, wherein at least two of the optical signals include both analog and digital (see from col. 3, line 59 to col. 7, line 42).

Feldman differs from claim 50 in that he fails to teach a mux/demux/router component that is operative to receive electrical signals that have been converted from optical signals received from the head end, demultiplexs the received electrical signals and forwards separate demultiplexed signals to the second lightwave interface device

Art Unit: 2638

that transmits the separate demultiplexed signals to designated mini fiber nodes.

However, Frigo in US Patent No. 5,521,734 teaches a mux/demux/router component (220)(Fig. 3) that is operative to receive electrical signals that have been converted from optical signals received from the head end, demultiplexes (i.e., DMUX 128)(Fig. 3) the received electrical signals and forwards separate demultiplexed signals to the second lightwave interface device (116)(Fig. 3) that transmits the separate demultiplexed signals to designated mini fiber nodes (i.e., ONU#1-ONU_n-1)(col. 4, lines 37-61).

Therefore, it would have been obvious to one having skill in the art at the time the invention was made to incorporate the mux/demux/router component that is operative to receive electrical signals that have been converted from optical signals received from the head end, demultiplexes the received electrical signals and forwards separate demultiplexed signals to the second lightwave interface device that transmits the separate demultiplexed signals to designated mini fiber nodes as taught by Frigo in the system of Feldman. One of ordinary skill in the art would have been motivated to do this since Frigo suggests in column 4, lines 37-61 that using such a mux/demux/router component has advantage of allowing distributing the signals including analog signals and digital signals from the central office to the designated mini fiber nodes.

Response to Arguments

12. Applicant's arguments with respect to claims 42, 49 and 50 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanh Phan whose telephone number is (571)272-3035.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye, can be reached on (571)272-3078. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-4700.


HANH PHAN
PRIMARY EXAMINER